(54) EXTENSION DE LA PRESENTATION DE DONNEES ® DETAIL EN CONTEXTE ‾ AVEC INTERFACE AVEC LA FONCTION DE ZOOM INTEGRAL

(54) EXTENSION OF DETAIL-IN-CONTEXT DATA PRESENTATION WITH INTERFACE TO FULL ZOOM FUNCTION

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FUNCTION

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INTRODUCTION

Detail-in-context presentations of data using techniques such as pliable surfaces[1] are useful in presenting large amounts of information on limited-size display surfaces. Detail-in-context views allow magnification of a particular region of interest (the "focal region") in a data presentation while preserving visibility of the surrounding information. This is an improvement over conventional full zoom and inset views of data. This patent describes an invention that involves the coupling of detail-in-context viewing and its associated user interface with a conventional full zoom function. The invention provides additional functionality and utility to the user by, for example, allowing the user to quickly navigate to a region of interest within a continuous view of a larger area, and then zoom in to that region for detailed inspection and/or editing.

The invention can be implemented in software and is applicable to the control of detail-in-context data presentation techniques, including, without being restricted to, the technique known as "Elastic Presentation Space" as described in reference 1 and also referred to as "Pliable Display Technology".

DESCRIPTION OF THE INVENTION

Detail-in-context data presentations are characterized by magnification of areas of an image or other detailed set of information where visible detail is desired, in combination with compression of a restricted range of areas of the remaining information (the "context"), the end result typically giving the appearance of a lens having been applied to the display surface. This "lens" can be described as having a focal region having high magnification and a surrounding "shoulder" region where information is typically visibly compressed. The combined area covered by the focal region and the shoulder region is hereinafter referred to as the "extent" of the lens. The extent of the lens may be shown to the user via a bounding rectangle or other shape coincident with the perimeter of the extent. The invention consists of the linkage of a detail-in-context data representation with "full zoom" operations and certain user interface elements such that

1. The user can "zoom in" to the lens extents or the focal region, such that, respectively,

    a)   the visible area formerly occupied by the entire set of visible data becomes occupied by a magnified view of the lens extents or the focal region,

    or

b)   the visible area formerly occupied by the set of visible data outside of the focal region becomes occupied by a magnified view of the data at magnification equal to the magnification of the focal region.

Furthermore,

2. A history of zoom and magnification operations may be maintained (saved), and user interface elements may be provided, such that the user can restore previous views of the data including the lens and the original visible area of the data.

References Cited

1. M. S. T. Carpendale, A Framework for Elastic Presentation Space, Ph.D. Thesis, Simon Fraser University, Burnaby, BC, Canada 1992